



# The Literary Sources of our Pharmacopœia.

BY

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MR PRESIDENT AND GENTLEMEN,

Allow me to thank you for the honour you have done me in asking me to give the opening Address of your Session, and to assure you of the pleasure which I feel in being here to-night. On first receiving your invitation, and while fully appreciating it, I must confess that I felt a little doubtful as to my ability to prepare an address of sufficient interest to you as pharmacists, for although our professional pursuits are in some respects akin, yet my acquaintance with pharmacy is so slight compared with that of my audience, that I must appear to you a mere novice in the art and mysteries of your ancient craft. Nevertheless there is one subject of great and mutual interest to us all, I mean the British Pharmacopœia, and the issue this year of a new edition has for the present directed our minds very specially towards it. As some of you may be aware, I had a very small share in the preparation of the present edition, and while engaged on it my attention was drawn to the fact of my ignorance with regard to all pharmacopœias except our own, and more especially with regard to what I may call the evolution of the modern pharmacopœia out of the more ancient compilations of the same class. I therefore made a slight effort to extend my knowledge in this direction, and to-night I propose to lay before you a part at least of the result.

The origin of the use of natural substances as remedial agents has given rise to a good deal of speculation. It is probable, however, that primeval man originally acquired some such knowledge and practice as we see at the present time in dogs, for instance, and in wild animals ; that as his intelligence grew, this knowledge gradually became extended by experience, and has resulted ultimately in the large mass of information we now possess. It is thought that all kinds of plants and their products were originally tried as foods, and that the consequent acquaintanceship thus attained with the carminative, purgative, emetic, or other effects of some of them, resulted in the use of these being restricted to medicinal purposes. This much is certain, that from time immemorial mankind has placed a high value

on the remedial action of many plants and natural products. Among the most primitive peoples there is always a certain knowledge of domestic medicine the practice of which is largely in the hands of women, but very early in upward development we usually find it transferred to special medicine-men or combined with priestly functions. The earliest written documents we possess are Egyptian, the most ancient dating from about 2700 B.C., and several others are extant from later times. These contain formulæ, often complex, for the treatment of various ailments, the drugs being chiefly native plants, and a few common mineral substances. Few of them are potent, and they are essentially the same kind of medicines which we find in herbals and other medical treatises down to about 150 years ago. The influence of Egypt is traceable through Greek, Roman, Arabian, and mediæval medicine down to our own day. As different nations or communities flourished or decayed, so learning generally, and along with it medical knowledge, shared the common vicissitudes, and very frequently suffered almost total eclipse. Take Egypt as an example, or the “dark ages” in Europe which followed on the fall of the Roman Empire. It can never be estimated how much the world has lost by the extinction at that time of learning and science for so many centuries. The introduction of incantations as remedial measures—a species of cure which still exists under such names as Christian science, faith-healing and so on—is almost certainly traceable to the priest-physician, while witchcraft as a factor in medicine has been held responsible for the appearance of snakes, toads, vipers, and other repulsive objects in ancient and mediæval *materia medica*. Whatever their origin, there is no doubt that modern critical methods have displaced them for ever from their former prominent position. In justice, however, it must be said, or at least I have formed the opinion, that the peculiar and often disgusting character of these substances has drawn more historical attention to them than their importance or employment in actual cotemporary practice ever merited. Not to go further back than the Christian Era, we find that such authors as Celsus (d. 50, A.D.), Pliny (d. 79), Diosco-



rides (1st century), Galen (d. 201), and others, left behind them a mass of reliable medical information which is still to some extent an active force. Later we find the works of Arabian physicians taking a prominent position as authorities. Among these the most notable perhaps are Serapion (end of 11th century), who wrote a work on materia medica from Greek and Arabian sources; Ibn Baitar (d. 1248, in Damascus), who wrote a great work on food-stuffs, and remedial agents; and Avicenna (d. 1036 in Persia) who is probably the most noted of all the Arabian medical authors, and whose works held an authoritative position till the end of the 15th century. It may interest you if I give a short account of the kind of information contained in Avicenna's treatise on Simples. In the Latin translations it is called *De Simplicibus* or *De Simplicibus Medicinis*, the term "simples" being in those days not restricted to plants, but comprising all non-compounded drugs. There we find accounts given by him of a large number of plants, minerals, various natural products, and such things as scorpions, frogs, urine, blood, &c. Just at random let us take his account of Nutmeg (which I have abridged however)—"It is brought from India. The better sort are somewhat red in colour, fat, and heavy, the poorer sort dark, light and dry. They are hot and dry, astringe the bowels, and are aromatic in the stomach, sweeten the breath, bring up wind, digest food, and expel wind. They correct the stomach and liver," and so on. This is much the same information as is given in our most modern text-books on the same subject, but unfortunately Avicenna is not always so reliable. The lung of the fox is said to cure asthma, the lung of the pig, sheep, and bear to cure excoriations of the feet. Medicines are classified by him according to what is called their *Temperaments* into *hot and dry*, *hot and moist*, *cold and dry*, *cold and moist*, and these up to the fourth degree. Since these times therapeutics and medicine have progressed, but essentially such works as these closely resemble the great treatises on therapeutics of the present day in the curious mixture of truth, error, and speculation which they contain.

There are four outstanding authors, however, whose works deal specially with matters of interest to pharmacists, and who for long

were held as authoritative among apothecaries. These are Mesue (b. in Kurdistan, lived in Cairo, d. 1015), who wrote a work called in the Latin translation *Antidotarium Medicaminum Compositorum*; Nicolas of Salerno (12th century), who also compiled an *Antidotarium*; Matthaeus Platearius (Salerno, 12th century), who was the author of *Liber de Simplici Medicina* in which 273 drugs are described. This work was familiarly known as the “Circa instans” because it begins with these words. The second sentence was also famous for its definition of a “Simple”—“Simplex autem medicina est, quae talis est, qualis a natura producitur.” The fourth is Myrepsus (13th century), a Greek of Asia Minor, who wrote a largely used dispensatory. All these works were of course compilations from many medical authors, but together they form the model and basis of all succeeding pharmacopœias. In the 15th and early 16th centuries a number of manuals were written specially for apothecaries by different authors, none of whom are men of any great note. The titles sufficiently explain their purpose, and it will perhaps be enough for me simply to quote these. They are *Luminare majus*, Venice, 1496; *Luminare minus, seu Lumen Apothecariorum*, Venice, 1517; *Compendium Aromatariorum*, 1488; *De Medicamentis Simplicibus et Compositis*, Venice, 1491; *Manipulum Medicinarum*, 1523; *Officina Apothecariorum*, Lyons, 1532, and others of the same kind. The mediæval pharmacist, it is evident, was by no means badly supplied with manuals to guide him in his work.

The first book of the kind to receive the impress of any authority beyond that carried by the author's name was the *Antidotarium Florentinum*, Florence, 1498, a collection of medical receipts sanctioned by the University or Medical College of the city. But the first pharmacopœia sanctioned by the civil authority, and enjoined to be used under penalties by dispensers and compounders of medicines is that of the town of Nürnberg, published in 1545 under the title *Pharmacorum Conficiendorum Ratio, vulgo vocant Dispensatorium, etc.* It was compiled by Valerius Cordus, at the early age of twenty-seven, from various sources, but is chiefly founded on the practice of Galen. During a short residence in Nürnberg he shewed it to the physicians composing



the Medical College or Guild of that city, and they prevailed upon the Town Council to adopt it, and to make it authoritative on all under their jurisdiction. Its contents comprise the collection and keeping of simples, adulterations, succedanea or quid pro quo, weight and measures, and a large number of formulæ. In this book, therefore, the style and methods of which have been closely followed down to the present day, we have exactly the modern pharmacopœia. You may have observed that the word pharmacopœia has not occurred as the title of any volume I have mentioned up till now. The word *antidotarium* was the most common title for such works, and means “ something given in opposition ” to the disease, or *dispensatorium*, implying the giving out or dispensing of the medicine. The term pharmacopœia is not met with till 1561, when we find it twice—*Compendium Pharmacopœæ Joannis Placotomi*, Lyons, 1561 ; and *Pharmacopœa medicamentorum omnium, quæ hodie in officinis exstant, tractationem et usum ex antiquorum medicorum præscriptio continens*, Basel, 1561, a work by Anutius Foesius.

In the Nürnberg Pharmacopœia are to be found much the same preparations as in the British Pharmacopœia of to-day, and under the same names—pulvis, pilula, trochiscus, mel, syrupus, unguentum, aqua, oleum, and so on. As a rule the formulæ are much too complex, and often contain substances of no efficacy, but a great many of them must be regarded, even at the present day, as quite efficient. As a fair example we may take the *Electuarium Commune*, which is directed to be made as follows :—℞ Pulpæ Cassiæ, Pulpæ Tamarindorum, Senæ mundaæ āā ℥ ii, Rhabarbari, Violarum, Anisi, Polypodii āā ℥ i, Sacchari albi ℥ ii, Liquiritiæ ℥ ii, *Tritis conterendis et incisis reliquis, admisceatur*, Syrupus Polypodii ℥ iii, Sem. Foeniculi ℥ vi, *cum aquæ pluvie quantitate sufficiente, et Sacchari optimi lb. ii paratus*. This would make a laxative not unlike our Confectio Sennæ. It is difficult, however, to understand the value therapeutically of the *Species de Gemmis* made up of ivory, pearls, coral, sapphire, granite, and other stones, with sugar, roses, borage, &c., or the *Pulvis contra Casum* consisting of crab’s eyes, mummy, dragon’s blood, dried goat’s blood, clay, and rhubarb.



But the whole book is a mixture of good and bad receipts, the former perhaps preponderating. The internal administration of precious stones as medicines had in much earlier times grown out of the custom of wearing them as amulets and charms against witchcraft and evil spirits generally, a custom traces of which still linger among us. A large number of the Nürnberg formulæ owe their activity to essential oils and resins, such drugs as galbanum, cassia, fennel, myrrh, turpentine, cloves, roses, &c., occurring over and over again in all sorts and varieties of combination. But we also find opium, aloes, aconite, nux vomica, elaterium, scammony, antimony, cream of tartar, sulphur, mercury, arsenic, and other powerful drugs, largely relied on by ourselves for their therapeutical activity. Tea-leaves, curiously enough, has a footnote giving references, as if they were not well known (in the 1666 edition). Many precious stones are enumerated among the simples, but it is when we come to the animal kingdom that we find the greatest difference from our modern materia medica—millipedes, cranium and skin of man, butter from woman's milk, human fat, swallow's nest, and many similar substances too numerous to mention being included. No description of the different drugs is given, and no doses.

The Pharmacopœa Augustana (Augsburg, 1646) is a handsome volume, and is in some ways one of the most interesting of its time, owing to the minute and paternal directions given to the apothecaries by the Editor and by the Town Council, under whose authority it is published. The frontispiece is most elaborate, and shews the implements and furnishings of the apothecary's shop—scales, pots, jars, mortar and pestle, retorts, and even the labels—almost exactly as they are to-day. The Dean and Medical College of Augsburg, eleven in number, and one of whom is described as *Officinarum Pharmaceuticarum Visitator ordinarius*, dedicate it in pompous Latin to the Town Council. The introduction concerning the duties of the Pharmacopœus (pharmacist) is amusing, and I may perhaps be permitted to quote a piece here and there. “As in the province of medicine, the pharmaceutic art vindicates for itself not the least humble place, and as it exists as an integral part of medicine, moreover as

medicine among civilised peoples has always been held sacred and holy, therefore, it is necessary that the Pharmacist should be an honest man, trained in his art, holding exactly the reason and mode of preparing medicines, and properly skilled." It then goes on to explain that he should have what we in those days would call a high ideal of duty. "Therefore he should blush to do in secret what he would not do publicly : he should do nothing in his profession negligently or rashly, much less therefore fraudulently, and that not from the fear of punishment but from a love of virtue : that he be pius, humanus, benignus, affabilis, placidus, misericors, officiosus, ac erga pauperes mitis et liberalis, publica propriis ac privatis anteponens." Besides being a model of all the virtues, he is directed to have a good knowledge of Latin, not only that he may correctly read prescriptions, but that he may improve himself by study, and thus become a good judge of drugs, being able to distinguish between bona, mediocra, and optima. The shop is to be in a healthy and good locality, remote from dust, fumes, and smells, the drugs and furnishings to be kept clean and in good condition. Without a prescription or permission from the magistrates, he is not to sell poisons, love-philters, emmenagogues, nor abortifacients, neither himself nor by his servants or apprentices. In filling prescriptions he is to be vigilans, circumspectus, et fidelis ; he must neither add nor subtract anything. Succeeding chapters deal with the collection, choice, and preservation of drugs, antidotes, weights and measures, and other matters. At the end is a decree of the "most illustrious town-council" of Augsburg concerning physicians, surgeons, and pharmacists. When necessary they are to confer together faithfully, candidly, and diligently, for the public good. Surgeons, barbers, and bath-keepers shall not overstep the limits of their own callings, but, mindful of their oath and office, shall only perform those services to the patient which appertain to their several callings, preparing no medicines, much less administering them, and very much less selling them. Quacks of all kinds are forbidden the town under the designations of strollers, charlatans, empirics, apostates, Jews, artisans, fortune-tellers, pedlars, sleight-of-hand men, secret medicine



vendors, old women, and bombastic doctors. One paragraph runs :—“ That the good feeling between pharmacists and physicians may remain untouched, we will that no physician or pharmacist extol unduly one to the prejudice of another, or lower him by evil speaking.” There are many good receipts in this book by means of which an experienced and acute physician could treat well many conditions, but he would have to pick and choose carefully. There are also many valuable observations contained in notes appended to the formulæ. For example, of a compound of opium and hyoscyamus, it says—“ This divine remedy has the most stupendous effect in lessening the acutest pains.”

The Pharmacopœia of Brussels (1671) has a close resemblance to the preceding, as has also that of Cologne (Pharmacopœa Coloniensis, 1627). These are large, handsome volumes, beautifully got up and printed, and, like the others I have shown you, with most interesting frontispieces. In the preface to the latter, three reasons for its compilation are given :—1. That all medicinal preparations may be uniform for the sake both of physician and patient. 2. That the number of ingredients be fixed so that the apothecary is not oppressed by their multitude and the consequent expense of keeping them ready for use. 3. That the Town Council may the more easily inspect and regulate the shops. Both of them have several Latin poems prefixed in praise of the authors and their work, while the latter has some very curious rules in Latin verse regarding the choice of good drugs. Of *Asafetida* the rule is given,—“ *Quæ maje foetorem facit Assa, hanc dic meliorem.*” Whoever wishes to be a good judge of simples is advised to read these verses carefully, and commit them to memory.

We may turn now to the pharmacopœias of our own country, and I shall treat those of England and Ireland very briefly. Till 1617, apothecaries and grocers sold medicines, but in that year the former obtained a charter of their own, and henceforth became a separate guild or corporation. The Censors of the College of Physicians of London and the Wardens of the Apothecaries' Company were empowered to inspect drug shops and destroy bad medicines. In 1618 the College of Physicians

published the first edition of the Pharmacopœa Londinensis, which became authoritative in England and Berwick-on-Tweed, by an order of the King in Council. For the next hundred years it did not differ much from the very worst Continental ones. Thus in 1668, over 1200 simple medicines are enumerated in its *Catalogus Simplicium*, and these include the fat of man, lion, and vulture, hair, urine, blood, &c. One item is specially curious, *Cranium humanum violente morte extinctum*. In 1721 it was greatly simplified, and there was a steady improvement till the last edition was published in 1851. This is still in Latin, but contains only 273 separate drugs, apart from their preparations. Previous to the publication of a pharmacopœia, some of the books I have mentioned earlier and Gerard's well-known Herbal were in use in England by apothecaries. The first edition of the Dublin Pharmacopœia was published in 1807, the last in 1850.

The first authoritative pharmacopœia in Scotland was compiled and published by the Royal College of Physicians of Edinburgh in 1699. This body had, by their charter, the right, along with a magistrate and pharmacist, of inspecting the apothecaries' shops in Edinburgh and Leith and neighbourhood, and of destroying such drugs as were not of good quality. By virtue of these powers, they were able to impose their pharmacopœia on the druggists in their own district, but it soon became authoritative all over Scotland as the Edinburgh Pharmacopœia. The first edition is to outward appearance a very humble production, badly printed, and poorly got up, but dedicated to King William. The preface is very short and to the point, not couched in the pompous and high-sounding language of some of its contemporaries. It states simply that although many pharmacopœias are in use, none of these are well designed to suit the case of Edinburgh. They are said to contain too many drugs and too complex compounds, hence a selection has been made of those in everyday use. Its object is stated to be to ensure the public safety, and that the apothecaries may compound their drugs in a uniform way. It enumerates nearly 900 simples, these being the usual mixture of what we now consider



to be efficacious or the reverse. Against such substances as opium, aloes, arsenic, chalk, we have to set mummy, excrements, precious stones, &c. Most of the compounds, however, are not nearly so complex as in some of the pharmacopœias of the same date which we have looked at, and some are extremely good. For instance, the *Pulvis contra Vermes* consists of san-tonica and rhubarb, the *Aqua Styptica* contains alum, and the *Pilula Hysterica* asafetida, galbanum, castor, &c. The last edition of the Edinburgh Pharmacopœia appeared in English in 1841, and is also a modest volume. We find in it iodine, potassium iodide, quinine, bismuth, morphine, strychnine, ergot, and numerous inorganic products, although chloroform, bromide of potassium, chloral hydrate, and tannic acid are still absent. Descriptions of the drugs and of processes of manufacture are often given, but no doses. Since the first edition it has reduced the number of supposed efficacious drugs from nearly 900 to a little over 300, the latter comprising, as we have just seen, many new and much more potent remedies than in former times.

From the very beginning the pharmaceutical preparations of the London and Edinburgh Pharmacopœias were, for the most part, the same as those of the present day. Some of the names, however, have become obsolete. Thus a common preparation is the Lohoch or Loch (the same word as lick), or what we nowadays sometimes call a linctus; another is the Rob, which is the juice of ripe fruits mixed with honey or sugar; and a third, the Quiddany, which was a sort of confection.

This brings us down to the British Pharmacopœia, the first edition of which was published in 1864, by collating those of London, Edinburgh, and Dublin, and the whole history of which, and its successors, is accurately set forth in the preface to the present edition.

In conclusion, I would like to say a few words as to whether the earliest Pharmacopœias of our own country reflect accurately the state of therapeutics at the time of their publication—the 17th and early 18th centuries. At that time the practice of medicine in both countries, but especially in Scotland, was in a

very backward state, and medical teaching still more so. Scotch physicians, for the most part, obtained their education in Continental schools, but the number of such men was comparatively small, and a great deal of the medical practice of the country was in the hands of quite incompetent persons. I have here a very extraordinary volume, long known in Scotland as *Tippermalloch's Receipts*, written by John Moncrieffe of Tippermalloch, a Perthshire laird, who was an amateur practitioner of medicine. The date on the title-page is written in as 1653, but so far as I can make out it was more probably published in Edinburgh in 1691. The preface says that he is a "person of extraordinary skill and knowledge in the art of physick, and has performed many stupendous cures." Also that he is indebted for many of the receipts to Petrus Hispanus (afterwards Pope John XXI.), and other authors, but that he has not taken them upon trust, but confirmed them by experience. It is said to have been in common use as a handbook of domestic medicine in respectable Scotch families. I must confess that this is hard to believe when one looks into it. It is divided up into chapters on diseases of the eyes, head, intestines, and so on, and is largely a list of foolish and often disgusting cures for diseases which are merely named without the addition of any clinical description. For "stones or grains in the ear" one is advised to put glue on the end of a staff and draw them out therewith, and there is no doubt other sensible advice scattered here and there, but what is one to think of this as a cure,—“Affright the patient with a red-hot iron in your hands, threatening to burn the part,” or “cause her to be frightened by putting some creeping vermine on her legs, such as mice, frogs, and the like.” Frogs, goat's dung, and similar things are often prescribed. If we turn, however, to the *Arcana Fairfaxiana*, a manuscript book of domestic medicine undoubtedly used at the same time by members of the well known Fairfax family in England, and a facsimile of which has been published by Mr Geo. Weddell of Newcastle-on-Tyne, we find many cures of the same kind, often marked “probatum.” A still more unpleasant picture of the medical practice of the time is furnished by the “*Pharmacopœa*

Bateana." This is a collection of the receipts of Dr Bate, who was physician to two kings of England, and the Protector, and these were thought to be of such value that the volume I shew you was edited with notes, by William Salmond, Professor of Physic, dedicated to King William III., and published in London in 1694. Here, we have gravely prescribed and commented on, such applications as a plaster for internal worms, a poultice of pigeon's dung for the plague, an amulet against the pestilence, alongside more sensible remedies. This was the work of a doctor of medicine, and is described as "exceeding in its Benefit and Usefulness to Mankind all the Dispensatories this day extant in what Language soever."

We have also Burns' description of Dr Hornbook's armamentarium, which was probably taken from some apothecary's shop of the time :—

Calces o' fossils, earths and trees ;  
 Pure sal-marinum o' the seas ;  
 The farina o' beans and pease,  
                                   He has't in plenty ;  
 Aqua-fortis, what you please,  
                                   He can content ye.

Forbye some new, uncommon weapons,  
 Urinus spiritus of capons,  
 Or mite-horn shavings, filings, scrapings ;  
                                   Distilled per se ;  
 Sal-alkali o' midge-tail clippings  
                                   And mony mae."

I am inclined to think, however, that the actual practice of medicine was not in such a backward state as these books would lead one to expect. No doubt such cures were used popularly, just as some of them are at the present day, but I doubt if their use was very wide-spread, or encouraged by the bulk of physicians. I have come to this opinion from the perusal of a rare and interesting little volume entitled "Pharmaco-Pinax, or a Table and Taxe of the Prices of all usuall Medicaments, Simple and Composed, contayned in D. Gordon's Apothecarie and Chymicall Shop, within Mr Robert Farquhar's high



Lodging, in New Aberdene. Aberdene. Anno 1625." This is a list of the medicines kept in the shop with prices attached, and it professes to contain all those in common use. To look through it, there is a remarkable resemblance to similar price-lists of the present day. To be sure we find human fat priced at twelve shillings Scots per ounce, mumia of Egypt at two shillings Scots per drachm, and pulvis lumbricorum, but these almost exhaust the list of such things, and otherwise the wares offered are ointments, plasters, pills, and powders, which differ only superficially from those of to-day. He also offers for sale—*For Bairnlie Diseases*, a "Syrope for the Kink-host" at three shillings Scots per ounce, and an "Electuarie for Toothing"; also *For Decorement*, "Water to make Yealow Haire," "Sweet Soape-Balls to wash the Hands," and so on.

The preface is extremely interesting in many ways, but I have no time left for it. He says that "hitherto in all the North part of this Kingdome, there hath been no well-ordered apothecarie shop," and announces himself as a pioneer. Further on he says,—“If anie of the People finde our Medicaments too deare, wee are not malecontented that they goe to others (having notwithstanding first essayed, if any Deduction may be made), providing they be eased, which is the chiefe thing we aime at.”

I am clearly of opinion that such a trade price-list, compiled by a man for the use of his customers, and whose worldly prosperity depended on his supplying them to their satisfaction, more accurately represents the drugs in actual everyday use than any medical compilation made at an age when ancient authors were slavishly followed and tradition held all-powerful sway.

The most noteworthy difference between the older and the present day pharmacopœias of all countries consists in the large number of chemically manufactured drugs found in the latter, as opposed to remedies of purely vegetable origin. The great improvements in technical chemistry have also enabled us largely to substitute active principles for galenical preparations, but the past history of pharmacy abundantly teaches us to look for gradual evolution rather than for any sudden revolutionary change in the future.



